ATARI COMPUTER ENTHUSIASTS

3662 Vine Maple Dr. Eugene OR 97405

APRIL, 1986

Mike Dunn, Jim Bumpas, Larry Gold, co-editors

Outstanding Users Group

EUGENE ACE

This was a tough call, because so many outstanding Atari users groups are active today. To name just a few around the U.S.—WAACE, SLCC, MACE, JACG, BAAUG, MILATARI, DAUG, DAL-ACE and ABACUS are some of the best.

Up in Oregon, the Eugene Atari Computer Enthusiasts are one of the strongest users groups around—and they have been in the forefront longer than just about any other group.

The highly regarded Eugene ACE newsletter earned an international reputation by premiering many outstanding public domain programs over the years. One example that comes to mind would be the action games of Stan Ockers—whose programs are published by this Oregon club even though he lives in Illinois.

The Antic Award for Outstanding Users Group goes to Eugene ACE as fitting representatives of the spirit of free information sharing, enthusiasm and good fellowship typical of the best of the Atari users group movement.

News and Reviews

by Mike Dunn, Co-Editor

In the last issue of ACE, I mentioned that many of the User Groups across the country have developed various methods for increasing the memory of the various Atari computers. I have a large file of these modifications, and will make them available to ACE members along with the public domain software which will make it work. I strongly recommend that you do not do so, unless you are an expert in soldering and debugging. Most of the user groups say that up to 50% of the people who do so, cannot get them to work without many hours of debugging. I tried to change the chip in my 130XE so as to use the Newell Omnimon XL, and could not get it to work. It is very easy to lift a tracing when doing this type of work and very difficult to find the error. But read on if you want to still have a super Atari.

At the last CES, Atari showed the sensational 320K Atari 130XE by Charles Andrews, an active member of our local ACE. Charlie took my computer, wired in a nifty switched OS, and expanded the memory to 320K. Using his own proprietary methods which are now being evaluated by Atari for possible use in future 8-bit Ataris, Charlie has developed an advanced system which runs all software, allows a cold start without erasing the ramdisk, and many other nifty features. Using software developed with our local C expert and Sysop of the ACE BBS, Ralph Walden, this system allows you to have two single density or one double density RAMDISKS acting exactly like a real disk drive and can be dynamicaly reassigned. There are other programs included, including the option to redefine keys to add extra editing commands and faster cursor action to your Atari. The RAMDISKS can be used with BASIC XE, SYNCALC XE, AtariWriter +, The Writers tool, DV-C (by Ralph Walden), ACTION! and Assembly Language.

Any compiling done with the RAMDISKs is extremely fast. You can do things such as put data on the RAMDISK with Syncalc XE, then load in AtariWriter + to edit it. It is great for making many copies of a double-sided disk, using one RAMDISK for each side. Wonderful for club disk librarians and serious programmers. Using a program such as Visualizer allows extremely rapid "Slide Shows" of graphics. The new ACE BBS uses a Andrews/Walden modified Atari 130XE, using the Ramdisks for high speed operation along with a 10 Meg Hard disk.

He charges only $169 for the 320K version including the software, and for $10 more will wire in an alterate OS socket with switch. The above can be done on your 800XL or 130XE. Contact Charlie at 6591 E st, Springfield, OR 97478, 503-746-5774.

If I have not talked you out of doing it yourself, and you don't mind some incompatiblities with your present software, I will send you a reprint for the computer model you specify and a disk of public domain software (not as useful as the above), for $7, with $3 extra for each additional model. At your own risk.

For those of you who wish to do the same to your 520ST, with the same warning above, my favorite newspaper, The Computer Shopper (407 S, Washington, POB Box F, Titusville, FL 32781, $18 year) has a wonderful article with many photos in the April '86 issue on expanding to 1 Meg. This newspaper is a monthly ad and classified paper that recently has had many very good Atari articles — I always read it cover to cover and find it very worthwhile. Charlie will do it for you for $175.

Something really new for the 8-bit Ataris. A company called IPM (POB 23123, Richmond, MN 55423) has a temperature sensor with software for $20, a security-alarm system for $20 and a serial port doubler that allows you to run 2 printers and 8 disk drives for $26. They also have a Real World Control Box for $24. New programs for the library ($10 for 2 sides)Best of ACE #16 Mysterious Mansion, a text adventure game which takes up an entire disk by Tim Roberson. Rocks and Minerals by Peter Loeser — a test from Willits HS in California Business Disk #4, consisting of the Checkbook/budget program from Stan Ockers and Smartsheet, the spreadsheet program from Ken Shui of Australia. Atari DEMO Disk #4, a nummber of demo's, mostly from the Atari Company, including the bouncing ball of Amiga fame, the bouncing FUJI, etc. Very impressive 8-bit graphics. Remember all ACE disks are now $10 for 2 sides — each of the above programs are one side each.

Josepha Haveman, a long-time ACE member, and associate professor at the California College of Arts & Crafts in Oakland, California is exhibiting her computer art at a one-person exhibition at PC Time, a new Computer Art Gallery, 1875 Mission Street, San Francisco, California. This show includes art created on 8-bit Ataris, and the show lasts throughout April.

ANTIC AWARDS ACE

Dick Barkley, our President, has received a letter from Antic magazine in which they inform us they are giving us an award at the next COMDEX show in Atlantic City, New Jersey. The award is for being the "best" user group. This is very nice, and makes us all feel very good. It's a good bit of encouragement to us to keep on trying to do better.

VP RAMBLINGS

The BBS is going full swing and seems to be just what you want in a BBS. If you have any further suggestions or complaints please let us know so that we can make the board fit your wants and needs. For those of you who haven't used the board yet, you are in for a surprise. The board is fast and has many files listed in sub-directories. Things are easy to find and the message bases are just enough to cover what is needed, and if you are a member, the weekend is yours, because the board is for members only. It's your board —try it!

People keep asking me what word processor is best and I can't answer that question unless they tell me what they want to do with it. My wife wrote a book using "Atari Word Processor" and this was one of the first word processors available for the Atari. It has many faults but it did the job and the book got written and eventually published. Now I know that most of you aren't writing a book, but maybe you do want to write letters, do home work, or just anything using words. Well, to meet those needs and any others you may have you should sit down and make a list of all the things you want to be able to do with the word processor. After you have the list you should go down to your local Atari dealer and talk to him about which word processor will do all the things you want to do. After talking to him you may find that there isn't one that will do all that you want. At that point you must weigh what you really need and what you can get. In today's market you can usually find one that will do all that you want, but if you can't, it's possible you need a differant computer. Using this method you can pick out the programs you really need to do the things you want to do with your computer.

If you do not have a local Atari dealer or general software store, you can write to the mail-order stores and tell them what you are looking for, and they will recommend one that they feel meets your needs. If you have a library you might check with them to see if they have any books or magazines that can help you. Lastly we print reviews of software and in our back issues there could be a review that could help you. What with so much software that is available to the user today it is best to look it all over very carefully before buying because it just might not do what you want.

Remember to choose carefully and you will get more enjoyment from your computer.

— Larry Gold
Vice-President

DVORAK XE

(reprint: March, 1986 POKEY)

This program is a Dvorak keyboard handler. It is switchable from the keyboard, reset-proof, and compatible with all 8-bit Atari computers. It runs with AtariWriter, BASIC, MAC/65, [Writer's Tool — JB], and most other applications using DOS 2.0 or 2.5. The only bad news is that when in Dvorak mode and/or single-keystroke cursor mode, auto-repeat is disabled. Sorry, but the logic for auto-repeat is in a separate part of the Operating System, and i wanted to keep the size of the routine low. A note for 1200 XL users: This handler doesn't recognize the function keys F1-F4 (but they're not used much, anyway).

If you use AtariWriter with a printer driver from APX, you can combine the two files to take advantage of both. Rename the Dvorak AUTORUN.SYS to something else, put it on the same disk as your printer driver (which is AUTORUN.SYS). Then use DOS option C, with the from/to devices D:DVORAK,D:AUTORUN.SYS/A (the "/A" means "append"). I have done this with my Panasonic driver and it works fine.

When you boot up you are in standard (Sholes) mode. To use Dvorak, hold down the Control key and press the number "4". If you decide you don't want to use Dvorak, Ctrl-4 will toggle you back to Sholes. In addition, I've added a feature I've heard of in other programs. Single-stroke cursor keys. Pressing Ctrl-5 will toggle you between single-keystroke and Ctrl-keystroke modes. When in single-keystroke mode, Ctrl-keystroke is necessary to get -, =, + and *.

— Dave Yearke

BUMPAS REVIEWS

PBS now has two new television series about computers. Computer Chronicles is a weekly information magazine for the computer literate. It's co-sponsored by BYTE magazine and Popular Computer magazine and the American Federation of Information Processing Societies. The New Literacy is a telecourse introducing computer concepts, system data flow, applications, design and programming.

ZOOMRACKS UPDATE

ST

The latest edition of the manual is now typeset and contains an index. If you send in your registration card, you'll receive it. But I'm told by the designer of the program the best way to learn the program is to wade in and get wet. Use the manual for a resource to help you in case you get stuck.

ANTIETAM

XE

The programmers at SST have worked quickly to solve the problem I reported last issue. **Antietam** now works fine in solitaire mode. You can finish the last 5 hours of the game as quickly as the first turns. If you play the game solitaire, be certain you get the fixed version. After finishing the game I can say it has a much more exciting feel to it than past solitaire games. Even though I beat the computer roundly, I felt I had to apply myself to achieve the result. I'm now in my first 2-player game, so I should have a more difficult time of it.

KAMPFGRUPPE

XE SSI has issued "Scenario Disk 1" ($20) for one of their most successful and popular games, **Kampfgruppe** . The game is a tactical armored game simulating battles between Germany and Russia during WW2. The Kampfgruppe game permits you to draw your own maps and to form orders of battle to your own specification. So you can create these, and other, scenarios on your own. But if you've tried it, you know that the maps are VERY large and it takes a long time to create a map on your own (unless you use the program's automatic, and more or less random, map generator).

SSI has done all the work for you, and with a historical accuracy which will please the history buff. This disk contains the following scenarios: "Bridgehead" — a race to capture an intact bridge just after Operation Barbarossa has begun; "Panzer Thrust" — a small meeting engagement where the Germans try to capture a town; "Eagle's Nest" — a Russian assault on a prepared position; "Inferno" — a German assault on a Russian city; "Berlin" — a Russian assault upon the outskirts of Berlin.

Anyone who enjoys Kampfgruppe, and there are a lot of us, will want to add these scenarios to their game.

MINDWHEEL

ST Broderbund brings us **Mindwheel** ($40), the text "electronic novel" by Synapse. All you folks who waited for them to port this game from the XE computers to the ST can now enjoy the play complete with GEM interface and all the power and speed of the ST computer.

This is an "electronic novel" because you read a story before you begin play. As you read, you get involved in the story. As the play begins, you extend the story by the choices you make during the game. As a "mind adventurer" you will save the world.

— Jim Bumpas

ALTERNATE REALITY

DataSoft announces the "Alternate Reality User Group". You are invited to join if you send in your warranty card. A bi-monthly newsletter will discuss questions received about Alternate Reality. It will also contain play hints and discussions about mapping, weapons, and other aspects of the play of the game. Special features will include stories written by players about the characters they have created.

Benefits of membership also include the option to buy artist's rendering of The City, special Alternate Reality T-shirts, and special contests. This newsletter is designed to make play of Alternate Reality more enjoyable. IntelliCreations, 19808 Nordhoff Place, Chatsworth, CA 91311 (818) 886-5922 has more information.

The first issue of the newsletter tells you the goal of the episode "The City": You are to completely map the City and build a high-level character which can have a chance in subsequent episodes. You will need the map because you can always return to The City from any other episode. You will need a high-level character to survive future episodes. The character you build in The City can play in any future episode.

STuff

1st WORD

Atari is bundling a new version of **1st Word** with current ST sales. This version no longer does the formfeed at the top of every file. And you can double-space your printed output. Now, if they only add the ability to print to a disk file, and perhaps a built-in telecommunications utility. . .

There have been a lot of questions about how to set up a custom printer driver for First Word and I will try to answer that for you here. The first thing you must remember is that the file 1ST__PRNT.DOT MUST be in the root directory of the disk drive as that is the configuration data for your printer. To set it up you follow these directions:

1. Boot 1ST WORD
2. Open the PRINTER folder and open the appropriate file with the .HEX extender which is closest to your type of printer. (I'll use mine as an example, Epson FX100 so I loaded the FX80 file)
3. Some of the features of the Epson are "commented" out by being preceded with an *. If what you want is here just delete the *. If not you may be able to implement it by the following.
4. Look in your printer manual or the hex codes of the capability you want.
5. Pick a character in the character set before hex 20, like the LCD numbers in the char. table. Insert in here the Hex codes you want such as, for instance, if you want to implement proportional spacing on the Epson you could define the LCD 0 as "start prop. spacing" by typing in the following 10, 1B, 70, 31 * LCD 0 = PROP. SP. (The 10 is already there but the commas and spaces between hex numbers must be used. To define LCD 1 as "end prop. spacing" type this: 11, 1B, 70, 30, * LCD 1 = END PROP. The stuff after the * is just comment so you can print it out and remember what you defined them as.
6. After you have defined what you want save the file using the "save as" option from the file menu. (To be sure you are handling the right source file go to the top of the file just below where it says "Name of printer" and type in the name of your printer.)
7. Then double click on the INSTALL.PRG file. When it runs, give it the name of your configuration file (the name you saved it under). Then it will make a new 1ST__WORD.DOT file in the PRINTER folder.
8. Now you have to copy that file out to the root directory by opening the PRINTER file in one window and the regular disk directory in another & dragging it from the folder to the other window.
9. If you followed these steps carefully you should now be able to use prop. spacing by placing the cursor, going to the on screen char. table, clicking the LCD 0, where you want to start, and then the LCD 1, where you want to end.

I have implemented Proportional, double strike & elongated in this way. You should be aware that this may conflict with future updates with new features which might use these characters.

Additions to the ST Library include:

VIP .WKS 1, 2, & 3 (3 disks of Lotus templates for use in VIP.

Pat Warnshuis' CS-Editor and a RAM test utility.

DVORAK.TOS — Dvorak keyboard (hyphen is missing, but it has two keys with quotation marks!); PUZZLE.ACC — letter puzzle; ICON8.TOS — icon editor; ANALOG.ACC — analog clock; LISP.TOS — lisp interpreter; PRETTY.TOS — print utility; BACKGAMM.BAS — backgammon; BLUE.ACC — forces a pleasant blue screen; AUTO.PRG — displays graphics patterns with user inputs; RAM.ACC — shows current free RAM; RIPCORD.PRG — parachute drop game; TSIZE.PAS and PFIX1.PAS — two OSS Pascal source files for your edification.

MIDI MUSIC MAKER

(reprint: January, 1986 POKEY)

POKEY was the first user group newsletter in the country to publish a LOGO program for the ST, the first to publish a C program for the ST, and now we are the first again to publish a BASIC program for the 520ST.

This program will let you compose musical tunes from your 520ST using an electronic keyboard or synthesizer. All you need is a keyboard such as the Casio 1000 or Casio 1001, or any synthesizer with MIDI IN and MIDI OUT connections. To connect the keyboard or synthesizer to your ST all you need are two 5-pin DIN to 5-pin DIN connecting cables. Just plug the keyboard into your ST, run this program, and compose away! The 520ST MIDI Music Maker allows you to store melodies of up to 1000 notes and the program itself is fairly self-explanatory.

— Chris White

HINTS

For New Users

From the February, 1986 "Feedback" (Adelaide, Australia) we have a hint about using head cleaning disks on our 5.25" drives. There are two usual methods of using these disks: 1. Insert the head cleaning disk and turn on the computer; and, 2. Load DOS and format the disk with the head cleaning disk in the drive.

The first method only uses track 1 of the head cleaning disk, since the system tries to boot the disk. This will waste the rest of the cleaning surface of the disk.

The second method uses the entire cleaning surface, but many head cleaning disks have no write protect notch, and so cannot be used in this way.

The best solution is to use method 2, making sure the head cleaning disk has a write protect notch. If you need to notch it, line up the disk with one already containing a notch and carefully (lightly!) mark where the notch should go. Then take a paper hold punch and notch the disk!

On your ST machines, try using the Esc key more. Every time you insert a new disk in the drive, the Esc key will give you the current directory.

If you want to speed up the process of editing when using a word processor, select the "Install Application" option on the desktop after highlighting the word processor program you'll use. For parameters, give it "*.DOC" (or whatever extension you usually use for word processing files) and save your desktop. From then on, when you boot up this disk you will be asked to select a document file. Once selected, the ST will then load your word processor and the document file you've selected will be ready to edit. Saves you a step each time you boot up the disk.

How about a $4 printer stand? Here in Eugene, the discount department stores sell plastic-coated, wire-frame refrigerator baskets for between $3 and $4. I've bought two of them, one for the office, and one for home. I turn them upside down and put the printer on top. The opening in the back is wide enough to hold 16"-wide paper for the SG-15 at work. I think they're sturdier than the wire-frame printer stands which cost $25 and more. Give them a look and see if they won't serve your purposes, too.

ONE MILLION BYTES

Ever since the 520ST came out, I've read and heard about upgrading it to one meg. Why does anyone need a million bytes? They must be loony! So I thought. Well, after trying to build a spreadsheet using VIP, I became one of the "loonies"! I was limited to about one and a half pages per sheet so it took nineteen separate files to hold the information I needed. VIP loaded with about 40K free. "No problem," I thought. As soon as the TOS ROM frees up 200K, that will give me 240K free. Guess again! With TOS in ROM, I had only 80K free. This cut my project down to "only" eight pages! Try to do statistics on data spread over eight different files!

For the last two months, I've been trying to get a recommendation from Atari on anyone who does the one meg upgrade. They refused to recommend anyone. They also warned that an 520ST which is damaged during any kind of unauthorized modification, will be repaired by Atari for a minimum $200 charge! Last week I called Atari again and Richard Frick's office recommended Mind Mine Atari Computer Center in Bellevue, Washington.

I called Mind Mine and spoke to Lee Rahfeldt about the upgrade. He has a wealth of information about the ST. Mind Mine's upgrade is priced at $179.95 and includes return postage by UPS. You get the 520ST to them, they upgrade it and get it back to you for $179.95. I was concerned about letting my 520ST go for a few weeks but Lee put my mind at ease. Can you believe, a one day turnaround! I couldn't wait so off went my ST, and in less than a week, it was back, a half meg "heavier".

Does it work? I loaded VIP and checked the available memory: 592,056 bytes available. Over half a million bytes to do anything my little heart desires!!! I've tested almost all of my programs and games and they run as they did before. I can't find anything which doesn't work with this upgrade.

We all know a review should mention the bad news as well as the good. This is really a hard one because I can't find a thing to complain about and for me, that's unusual. Instead, I'll use the space to tell you a little more about the upgrade and about Mind Mine. Mind Mine's upgrade is not just piggy-backing chips. It is a custom 512k board which fits into the space Atari left when they decided not to include the RF modulator in the ST. This board solves the overheating problems of the piggy-backed chips. Mind Mine warantees the upgrade for 90 days.

Mind Mine has just become an authorized Atari 520ST service center. I don't know how this might affect an upgrade to "in warranty" units. Call Lee for details. Lee also mentions some other interesting things. Some of the original power supplies for the STs, the ones with the cords coming out of each end, may be defective and cause a 15 volt power surge on startup. This may be a cause of some STs failing. If you have one of these power supplies, please have someone check it. If you send your 520ST to Mind Mine for their upgrade, be sure to include the power supply even if it is one of the newer ones, and Mind Mine will check it and your 520ST before doing any upgrade.

I don't think Mind Mine will be able to keep up with a one day turnaround after people find out about their upgrade. They may be busier than they imagine, so, if you want a meg, do it soon!

Mind Mine is also developing a diognostic program for the one meg 520ST and will send one to all of those who purchase their upgrade and return their registration card. This diagnostic program is being developed in MT-Forth-83.

MT-Forth-83? Mind Mine is marketing MT-Forth-83, a complete implementation of F83 model of the Forth-83 Standard by Laxan & Perry, ported to the 520ST by the author of the original APX Extended fig-Forth. This is a 16-bit Forth with 32-bit addressing for utilizing all Atari-ST memory. It includes complete GEMDOS file I/O system, full Graphics, Mouse and sound words, a DEBUG package, source code for all Atari-ST extensions, two different full-screen editors, a multitasking system and all F83 utility words. How many hundreds of dollars? How about $49.95! A complete Developer's extension is also available for an additional $59.95 or both for $99.95.

When you contact Lee, ask him about the 80+ lotus templates and his TOS ROM boot disk and about the ST Doll. At the rate Mind Mine is developing things for the ST, he will probably have another hundred items to tell you about. I think Mind Mine will become very well known in a very short time.

Contact: Lee Rahfeldt
Mind Mine Atari Computer Center
13256 N.E. 20th, Suite #4
Northrup Building
Bellvue, WA 98005
(206) 641-6138

Another item you should be aware of is a publication called CURRENT NOTES. This is published ten times per year by the Washington Area Atari Computer Enthusiasts (WAACE). It has a cover price of $2.25 and is available by subscription for $15 a year. The issue I have is March '86. It's 48 pages long and contains 8-bit and 16-bit reviews, programs and my favorite subject, rumors. Tons of rumors! Enough to keep me happy for hours. The reviews appear to be honest and fairly complete; the rumors seem to be from knowledgable sources and close enough to others I've heard to convince me that CURRENT NOTES knows some things worth reading. They also mention some things which really whet my appetite: An Atart TT running CAD/CAM under Unix Version 5 in low res of 1024x1024 or a hi res of 2048x2048 with, hold on to your hat, 16 million different colors. If this isn't enough to curl your socks, the price, including a 20 meg hard disk will be about $3,000. Well! Maybe I can't afford the $3,000 but $15 for the CURRENT NOTES newsletter is already in the mail.

Joe Waters, Editor: CURRENT NOTES
122 N. Johnston Rd.
Sterling, VA 22170
(703) 430-1215

— Steve Golden

MEETING
WEDNESDAY
APRIL 9TH
7:30 PM
SOUTH EUGENE HIGH

SHARED DRIVES

(reprint: March, 1986 SCAT)

With the prices on 8-bit computers dropping, I have ended up with a number of computers and too few disk drives or printers to go around. I made a cable to connect two computers to one or two disk drives, so two people can play games simultaneously, or to access one disk with two different programs running without reloading programs.

If you want to get more use out of your system, this is how I do it. I do want to warn you, though. I could not find the technical data to know for sure if this hookup is completely compatible, so I make no guarantees. But I have it hooked up and use it with a 130XE and an 800. This hookup has also worked successfully on an 800 and a 400, and on two 800s. The disk drives I have used are an Atari, Indus, and a Rana, both alone and daisy-chained. So far all systems work fine.

You will also have to have two monitors or an antenna switch to view each computer's output. Here's what each cable pin is used for with a 13-pin plug: *1 — Clock In; 2* — Clock Out; *3 — Data In; 4* — Ground; *5 — Data Out; 6* — Ground; *7 — Command; 8* — Motor Control; *9 — Proceed; 10* — 5+v/Ready; *11 — Audio In; 12* — 12+v; *13 — Interrupt.

To make the new cable, use pre-made cables, one 3-foot, the other 6-foot. Cut the 3-foot cable in half, and cut 1.5 feet off the 6-foot cable, leaving 4.5 feet on the other end. Obtain a 2-foot length of 6 conductor cable, and connect one end to each terminal of a DPDT switch. Now mount the switch in a box which will sit in front of your disk drive. You now have one switch with cable attached and 4 plugs with cable attached (only 3 will be used; set aside one plug for parts). Mark the plug with the 4.5 foot length of cable (C) for computer and one 1.5 foot length (C) for the second computer, and another 1.5 foot length (D) for disk.

Take the case off the plug to determine the color of the wires to each pin or use an ohm meter or a continuity checker to determine the color of the wires and make a chart. There is no standard color code, so be careful. Find the 3 wires attached to pin *1 of each plug and splice them together. Continue to splice wires for pins 2*, *3, 4*, *5, 6*, *9 and *13. Now splice the wire from pin 12* of one of the computer plugs to 12* of the disk plug (two wires), and repeat for pin *11. (The 12 volt cannot go from computer to computer, and the audio will sound in both monitors if connected.)

Tape the extra wirres from the other computer cable from pin *11 and 12*. Splice the wire from pin 10* of one computer plug to the wire connected to one corner of the DPDT switch. Repeat for tne center tap of the switch to 10* of the drive plug, and repeat for the other wire on the same side of the switch to pin *7. Make sure you don't mix up the wires — the switch should have the configuration in figure 2.

FIGURE 2.

C1	Dr	C2
10*	10*	10*
7*	7*	7*

Now solder all the splices and tape them separately so no splices can touch each other. Then wrap tape around the splices so it makes a neat package. Use a continuity checker or an ohm meter to **CHECK YOUR WORK BEFORE** plugging them back into your computers. This is it; you're done. If the switch points to the opposite computer, just take it out and turn it around without unsoldering any wires.

FIGURE 3.

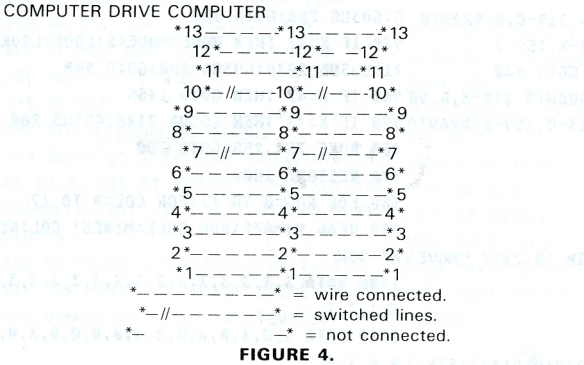
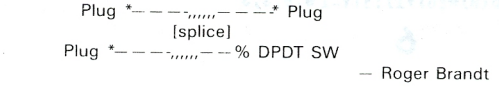


FIGURE 4.



— Roger Brandt

PACKET RADIO

(reprint: March, 1986 CompUtah)

What is packet radio? It is a system of sending data, text, files, or programs over a radio link using a modified X.25 protocol. The X.25 protocol is a system of blocking the data into no more than 256 character blocks, using ack/nak response, an address field and frame check sequence error checking in some ways similar to Xmodem or Amodem protocol. For those who understand data communications, it is a HDLC format.

One difference is the address portion of the block where you give your call and the call of the stations you are sending to. This field can contain up to 8 destination stations. Another difference is because packet uses one frequency or channel, it is half duplex.

The box which interfaces the computer/terminal to the radio is called the Terminal Node Controller, TNC. The TNC has several different sections. It is a protocol converter. It converts standard async to HDLC and back to async. It has a buffer, usually 16k. It contains a 202 compatible modem, microprocessor and ROM, as well as the hardware necessary to key the transmitter and sense the receiver.

How does it work? Let's go briefly through the process. You type in a message or access a file you wish to send to a friend. When you hit Return, the TNC will wait for the frequency to clear (nobody else using it). Then the TNC transmits a block and waits for a response. If it gets an ack, it will send the next block. If it gets a nak, it will send the same block over. This whole process takes a second or two. Because only the addressed stations respond to each other, several people can be using the same frequency at the same time with no interference with one another.

There are several BBS accessible only via packet radio and operate much the same way as our BBS works. Presently Hams are working on a TNC which will handle several different callers at the same time for a multiuser BBS.

There are some limitations on packet radio. Below 30 MHz we can go only 300 bps, but around the world. On 2 meters, 144 to 148 MHz, the most popular band for packet operations, we can only go 1200 bps. But on the 70cm band, 440 MHz, we can go 19.6k bps.

Now I will tell you the reason for all the addresses. VHF, 2 meters, and higher frequencies only allow line of sight communications. If you can't see it you can't talk.

I can see the top of mount Nebo, so I can talk to someone there. But I can't see Nephi, so I can't talk to Nephi. I can see Provo, and Provo can see Santiquin, and Santiquin can see Nephi. So, if I include the calls, addresses, of stations in all the intervening locations, each one will retransmit my message until it gets to Nephi and returns the response. This may not seem impressive but if you put the intervening stations on mountain tops, as planned, you could communicate with Denver, or maybe even St. Louis going east; or San Jose, Atari headquarters, going west. You must, of course, hold an amateur technician class or higher license to transmit, but anyone can receive.

There is a special bonus this year for packet users. One and possibly two missions of the space shuttle will have a packet system aboard so those interested can send and receive a message from the shuttle. I remember how excited I was in 1983, sitting in line at the bank when I heard, crystal clear, Astonaut Owen Garriott, W5LFL, aboard STS-9 on my handie-talkie with only a rubber duck antenna. This is the real opportunity to engage in the space program as an individual and get started in space communication.

In the near future a satellite will be sent up with a packet system allowing individuals to send up a message, have it stored, and then retrieved by someone on the other side of the earth. An orbiting BBS. Speaking of satellites, there are presently 9 satellites (6 Russian, 2 English, & 1 American) up there for amateurs to use on CW and SSB. This is only the beginning. The future holds real exciting advances in personal/hobby space communications.

The cost of getting into packet is about $300 to $1000 for a radio, antenna, and TNC, assuming you already have a computer or terminal. The cost of equipment to do satellite work is about $1000 to $2500 for 2 radios, antennas, and rotors. A computer is nice to help aim the antennas and to track the orbiting satellite as well as logging contacts.

If you are interested in more information, contact Stephen Lewis at 566-2620, or the Utah Amateur Radio Club HAM Hot Line at 583-3002.

— Stephen Lewis

PS: I wrote this article before the tragedy of the last flight. I think the planned packet experiment will be delayed, but will still take place because NASA still wants to involve the general population in the excitement of space travel and this is one method to aid in accomplishing that goal.

THE WANDERER

```
10 REM ********************************
20 REM *       THE WANDERER           *
30 REM *     by STEPHEN PEDLER        *
40 REM * ------------------------     *
50 REM * PAGE 6 MAGAZINE - ENGLAND    *
60 REM ********************************
70 REM
130 RAMTOP=PEEK(106):POKE 106,RAMTOP-1
6
140 GRAPHICS 0:POKE 752,1:POSITION 2,2
:? "Thinking a moment..."
150 DIM MAZE(17,17),LWAL(4),RWAL(4),P(
4),A$(18),C$(5),D$(4),E$(12)
160 A$="NORTHEASTSOUTHWEST":E$="THE WA
NDERER"
170 GOSUB 970:GOSUB 1890
180 GOSUB 2140
190 GOTO 690
200 REM DRAW MAZE
210 GRAPHICS 8:COLOR 1:SETCOLOR 2,12,4
:SETCOLOR 1,12,12
220 ON FAC GOTO 230,250,270,290
230 FOR J=1 TO 4:IF POSY-J<0 THEN P(J)
=0:NEXT J:GOTO 310
240 P(J)=MAZE(POSY-J,POSX):NEXT J:GOTO
 310
250 FOR J=1 TO 4:IF POSX+J>17 THEN P(J
)=0:NEXT J:GOTO 310
260 P(J)=MAZE(POSY,POSX+J):NEXT J:GOTO
 310
270 FOR J=1 TO 4:IF POSY+J>17 THEN P(J
)=0:NEXT J:GOTO 310
280 P(J)=MAZE(POSY+J,POSX):NEXT J:GOTO
 310
290 FOR J=1 TO 4:IF POSX-J<0 THEN P(J)
=0:NEXT J:GOTO 310
300 P(J)=MAZE(POSY,POSX-J):NEXT J
310 IF P(1)=3 OR P(1)=4 THEN CL=1:GOTO
 350
320 IF P(2)=3 OR P(2)=4 THEN CL=2:GOTO
 350
330 IF P(3)=3 OR P(3)=4 THEN CL=3:GOTO
 350
340 IF P(4)=3 OR P(4)=4 THEN CL=4
350 FOR J=0 TO 4:LWAL(J)=0:RWAL(J)=0:N
EXT J
360 ON FAC GOTO 370,400,430,460
370 FOR J=0 TO CL:RWAL(J)=MAZE(POSY-J,
POSX+1):NEXT J
380 FOR J=0 TO CL:LWAL(J)=MAZE(POSY-J,
POSX-1):NEXT J
390 POSITION 10,21:? A$(1,5):GOSUB 660
:GOTO 490
400 FOR J=0 TO CL:RWAL(J)=MAZE(POSY+1,
POSX+J):NEXT J
410 FOR J=0 TO CL:LWAL(J)=MAZE(POSY-1,
POSX+J):NEXT J
420 POSITION 10,21:? A$(6,9):GOSUB 660
:GOTO 490
430 FOR J=0 TO CL:RWAL(J)=MAZE(POSY+J,
POSX-1):NEXT J
440 FOR J=0 TO CL:LWAL(J)=MAZE(POSY+J,
POSX+1):NEXT J
450 POSITION 10,21:? A$(10,14):GOSUB 6
60:GOTO 490
460 FOR J=0 TO CL:RWAL(J)=MAZE(POSY-1,
POSX-J):NEXT J
470 FOR J=0 TO CL:LWAL(J)=MAZE(POSY+1,
POSX-J):NEXT J
480 POSITION 10,21:? A$(15,18):GOSUB 6
60
490 REM DRAW FACING WALL
500 IF P(CL)=4 THEN 530
510 X=CL*30:Y=X/2
520 PLOT X,Y:DRAWTO 319-X,Y:DRAWTO 319
-X,159-Y:DRAWTO X,159-Y:DRAWTO X,Y
530 REM DRAW CORRIDORS
540 FOR J=0 TO CL-1:X=J*30:Y=X/2:C=(J+
1)*30:D=C/2
550 IF J=CL-1 THEN IF LWAL(J)=0 AND LW
AL(J+1)<>3 THEN GOTO 580
560 IF LWAL(J)=3 THEN PLOT C,159-D:DRA
WTO C,D:DRAWTO X,Y:PLOT X,159-Y:DRAWTO
 C,159-D:GOTO 580
570 PLOT C,159-D:DRAWTO C,D:DRAWTO X,D
:PLOT X,159-D:DRAWTO C,159-D
580 NEXT J
590 FOR J=0 TO CL-1:X=J*30:Y=X/2:C=(J+
1)*30:D=C/2
600 IF J=CL-1 THEN IF RWAL(J)=0 AND RW
AL(J+1)<>3 THEN GOTO 640
610 IF RWAL(J)=3 THEN PLOT 319-X,159-Y
:DRAWTO 319-X,Y:DRAWTO 319-C,D:DRAWTO
319-C,159-D:DRAWTO 319-X,159-Y
620 IF RWAL(J)=3 THEN GOTO 640
630 PLOT 319-X,159-D:DRAWTO 319-X,D:DR
AWTO 319-C,D:DRAWTO 319-C,159-D:DRAWTO
 319-X,159-D
640 NEXT J
650 RETURN
660 REM MOVES
670 POKE 752,1:POSITION 10,22:? "MOVES
=";MOVE
680 RETURN
690 REM MAIN LOOP
700 ? "6";STX=INT((RND(0)*16)+1):STY=I
NT((RND(0)*16)+1)
710 IF MAZE(STY,STX)=3 THEN 700
720 POSX=STX:POSY=STY
730 GOSUB 1300
740 FAC=1:GOSUB 200
750 POKE 764,255
760 S=STICK(0)
770 IF S=15 THEN 870
780 IF S=14 AND MAZE(POSY-1,POSX)=4 TH
EN 1720
790 IF S=14 THEN IF MAZE(POSY-1,POSX)<
>3 THEN MOVE=MOVE+1:POSY=POSY-1:GOSUB
200:GOTO 870
800 IF S=7 AND MAZE(POSY,POSX+1)=4 THE
N 1720
810 IF S=7 THEN IF MAZE(POSY,POSX+1)<>
3 THEN MOVE=MOVE+1:POSX=POSX+1:GOSUB 2
00:GOTO 870
820 IF S=13 AND MAZE(POSY+1,POSX)=4 TH
EN 1720
830 IF S=13 THEN IF MAZE(POSY+1,POSX)<
>3 THEN MOVE=MOVE+1:POSY=POSY+1:GOSUB
200:GOTO 870
840 IF S=11 AND MAZE(POSY,POSX-1)=4 TH
EN 1720
850 IF S=11 THEN IF MAZE(POSY,POSX-1)<
>3 THEN MOVE=MOVE+1:POSX=POSX-1:GOSUB
200:GOTO 870
860 GOSUB 1420
870 K=PEEK(764)
880 IF K=35 THEN FAC=1:GOSUB 200:GOTO
960
890 IF K=42 THEN FAC=2:GOSUB 200:GOTO
960
900 IF K=62 THEN FAC=3:GOSUB 200:GOTO
960
910 IF K=46 THEN FAC=4:GOSUB 200:GOTO
960
920 IF K=57 THEN HELP=HELP+1:GOSUB 155
0:GOSUB 200:GOTO 960
930 IF K=37 THEN MOVE=MOVE+5:LOOK=LOOK
+1:GOSUB 2030:GOSUB 200:GOTO 960
940 IF K=47 THEN GOTO 1450
950 IF K=13 THEN GOSUB 2140:GOSUB 200
960 POKE 764,255:GOTO 760
970 RESTORE 1000
980 FOR ROW=0 TO 17:FOR COL=0 TO 17
990 READ M:MAZE(ROW,COL)=M:NEXT COL:NE
XT ROW
1000 DATA 3,3,3,3,3,3,3,3,3,3,3,3,3,3,
3,3,3,3
1010 DATA 3,0,3,0,0,0,0,3,0,0,0,0,3,0,
0,0,3,3
```

THE WANDERER CON'T

```
1020 DATA 3,0,3,0,3,3,0,3,3,0,3,0,0,0,
3,0,3,3
1030 DATA 3,0,0,0,0,3,0,0,0,0,3,0,3,0,
0,0,0,3
1040 DATA 3,3,0,3,0,0,0,3,3,0,3,0,0,0,3,
3,3,0,3
1050 DATA 3,0,0,0,0,3,0,0,0,0,3,3,0,0,
0,3,0,3
1060 DATA 3,0,3,3,3,0,0,0,3,3,3,0,0,0,3,
0,0,0,3
1070 DATA 3,0,0,0,0,3,0,0,0,3,0,3,0,3,
0,3,3,3
1080 DATA 3,3,0,3,0,0,0,3,0,0,0,3,3,0,
0,0,0,3
1090 DATA 3,0,0,0,0,0,3,3,3,0,3,0,0,0,0,
3,0,3,3
1100 DATA 3,0,3,0,3,3,0,0,0,0,3,0,3,0,
0,0,3,3
1110 DATA 3,0,0,0,0,3,0,3,3,0,0,0,3,3,
3,3,0,3
1120 DATA 3,3,0,3,0,3,0,0,0,3,0,3,0,0,
3,0,0,3
1130 DATA 3,0,3,3,0,0,0,3,0,0,0,3,3,0,
3,0,3,3
1140 DATA 3,0,0,0,0,3,3,0,3,0,3,3,3,0,
3,0,0,3
1150 DATA 3,0,3,0,3,0,0,0,3,0,0,3,0,0,
0,0,3,3
1160 DATA 3,0,3,0,0,0,3,0,3,3,0,0,0,3,
0,3,3,3
1170 DATA 3,3,3,3,3,3,3,3,3,3,3,3,3,3,
3,3,3,3
1180 REM NEW EXIT
1190 EXWALL=INT((RND(0)*4)+1)
1200 EXIT=INT(RND(0)*16)+1:ON EXWALL G
OTO 1210,1230,1250,1270
1210 IF MAZE(1,EXIT)=3 THEN 1200
1220 MAZE(0,EXIT)=4:GOTO 1290
1230 IF MAZE(EXIT,16)=3 THEN 1200
1240 MAZE(EXIT,17)=4:GOTO 1290
1250 IF MAZE(16,EXIT)=3 THEN 1200
1260 MAZE(17,EXIT)=4:GOTO 1290
1270 IF MAZE(EXIT,1)=3 THEN 1200
1280 MAZE(EXIT,0)=4
1290 RETURN
1300 REM DRAW MAZE IN PLAN
1310 GRAPHICS 1+16:POKE 756,RAMTOP-8:P
OKE 88,0:POKE 89,RAMTOP-4:DL=PEEK(560)
+256*PEEK(561):POKE DL+4,0:POKE DL+5,R
AMTOP-4
1320 SETCOLOR 0,7,8:SETCOLOR 2,12,8
1330 FOR ROW=0 TO 17:FOR COL=0 TO 17
1340 M=MAZE(ROW,COL):POSITION COL+1,RO
W:? #6;CHR$(M+32):NEXT COL
1350 NEXT ROW
1360 POSITION POSX+1,POSY:? #6;CHR$(5+
32+128)
1370 POSITION 4,20:? #6;"the wanderer"
1380 POSITION 4,22:? #6;"press START"
1390 POSITION 4,23:? #6;"to continue"
1400 POKE 53279,8:IF PEEK(53279)<>6 TH
EN 1400
1410 POSITION POSX+1,POSY:? #6;CHR$(0+
32):RETURN
1420 REM SOUND
1430 FOR J=1 TO 2:SOUND 0,80,10,15:FOR
 L=1 TO 20:NEXT L:SOUND 0,0,0,0:NEXT J
1440 RETURN
1450 REM QUIT
1460 OPEN #1,4,0,"K:"
1470 ? "5":POSITION 3,22:? "Are you su
re (Y/N)?";:GET #1,K
1480 IF K<>89 AND K<>78 THEN 1470
1490 IF K=78 THEN CLOSE #1:GOSUB 200:G
OTO 760
1500 IF K=89 THEN GRAPHICS 0:POSITION
2,1:? "You gave up after ";MOVE;" move
s."
1510 POKE 752,1:POSITION 2,3:? "Play a
gain (Y/N)?";:GET #1,K
1520 IF K<>89 AND K<>78 THEN 1510
1530 IF K=89 THEN CLOSE #1:HELP=0:LOOK
=0:MOVE=0:GOSUB 2010:GOSUB 1820:GOSUB
1180:GOTO 690
1540 IF K=78 THEN POKE 106,RAMTOP:CLOS
E #1:GRAPHICS 0:NEW
1550 REM HELP
1560 IF HELP>3 THEN ? "5No more help l
eft for this maze!":? :GOTO 1690
1570 C$="SOUTH":D$="WEST":? "5"
1580 IF EXWALL=2 OR EXWALL=4 THEN 1640

1590 IF EXWALL=3 THEN C$="NORTH":VERT=
17-POSY:GOTO 1610
1600 VERT=POSY
1610 HORIZ=EXIT-POSX:IF HORIZ<0 THEN D
$="EAST"
1620 GOTO 1670
1630 RETURN
1640 IF EXWALL=4 THEN D$="EAST":HORIZ=
POSX:GOTO 1660
1650 HORIZ=17-POSX
1660 VERT=POSY-EXIT:IF VERT<0 THEN C$=
"NORTH"
1670 ? "You are ";ABS(VERT);" steps to
 the ";C$;" of the"
1680 ? "exit and ";ABS(HORIZ);" steps
to the ";D$;"."
1690 ? "Press START to go on."
1700 IF PEEK(53279)<>6 THEN 1700
1710 RETURN
1720 REM YOU WIN
1730 GRAPHICS 1+16:SETCOLOR 0,7,8
1740 POSITION 2,9:? #6;"CONGRATULATION
S!"
1750 POSITION 2,10:? #6;"YOU FOUND YOU
R WAY"
1760 POSITION 2,11:? #6;"OUT IN ";MOVE
;" MOVES."
1770 POSITION 2,13:? #6;"press Start f
or"
1780 POSITION 2,14:? #6;"another game"
1790 POKE 709,70:POKE 711,202:FOR J=1
TO 20:NEXT J
1800 IF PEEK(53279)<>6 THEN POKE 709,2
02:POKE 711,70:FOR J=1 TO 20:NEXT J:GO
TO 1790
1810 LOOK=0:HELP=0:MOVE=0:GOSUB 2010:G
OSUB 1820:GOSUB 1180:GOTO 690
1820 REM CANCEL EXISTING EXIT
1830 ON EXWALL GOTO 1840,1850,1860,187
0
1840 MAZE(0,EXIT)=3:GOTO 1880
1850 MAZE(EXIT,17)=3:GOTO 1880
1860 MAZE(17,EXIT)=3:GOTO 1880
1870 MAZE(EXIT,0)=3
1880 RETURN
1890 REM REDEFINE CHARACTERS
1900 RESTORE 1920
1910 FOR J=0 TO 33:READ BYTE:POKE 1536
+J,BYTE:NEXT J
1920 DATA 104,104,133,215,104,133,214,
169,224,133,213,169,0,133,212,162,4,16
0,0,177,212,145
1930 DATA 214,200,208,249,230,213,230,
215,202,208,242,96
1940 A=USR(1536,(RAMTOP-8)*256)
1950 FOR J=0 TO 23:READ BYTE:POKE (RAM
TOP-8)*256+24+J,BYTE:NEXT J
1960 DATA 255,129,189,165,165,189,129,
255
1970 DATA 0,0,0,0,0,0,0,0
1980 DATA 0,60,36,255,189,36,36,102
1990 FOR J=0 TO 16:READ BYTE:POKE 1600
+J,BYTE:NEXT J
2000 DATA 104,104,104,133,213,169,0,13
```

HUNGRY HORRIS

```
1 REM ********************************
2 REM *       HUNGRY HORRIS          *
3 REM *    BY ANTHONY DAVIES         *
4 REM *     TEL.  TALYWAIN           *
5 REM *         772816               *
6 REM ********************************
7 REM
30 REM DISABLE BREAK KEY
35 POKE 16,112:POKE 53774,112
40 REM INITIALIZATION
45 DIM F$(10),B$(10),C$(10),D$(10)
50 DIM X$(2000),W$(20),P$(20),Y$(20),Z
$(20),M$(115),Q$(15)
55 M$="PRESS START       BY ANTHONY DAV
IES         ":X$(LEN(X$)+1)=M$
60 DIM AA$(LEN(X$)),AC$(LEN(X$)):AA$=X
$:Y$=W$
65 GOSUB 745:POKE 559,0
70 GOSUB 680
75 GOTO 720
80 POKE 559,32
85 DIM A(20),B(20)
90 NO=(LEV-1)*5
95 BONUS=999:FRU=20:LI=3:SC=0:M=0:G=0
100 STO=1:NN=10
105 REM SET UP SCREEN
110 GRAPHICS 1+16
115 POKE 16,112:POKE 53774,112
120 POKE 756,CHPAGE
125 SETCOLOR 2,10,5:SETCOLOR 0,3,6:SET
COLOR 1,0,6
130 IF SOU=2 THEN GOTO 140
135 Q=USR(ADR(SET$))
140 FOR T=1 TO 10:A(T)=1:B(T)=1:NEXT T

145 BONUS=NN*100-1
150 POSITION 0,0:? #6;"##################
######"
155 POSITION 0,15:? #6;"##################
#######"
160 FOR T=0 TO 15:POSITION 0,T:? #6;"#
":POSITION 19,T:? #6;"#":NEXT T
165 FOR T=1 TO NO:X=INT(RND(1)*17):Y=I
NT(RND(1)*12):POSITION X+1,Y+2:? #6;"#
####":NEXT T
170 FOR T=1 TO 20:X=INT(RND(1)*17):Y=I
NT(RND(1)*13):POSITION X+1,Y+2:? #6;"!
":NEXT T
175 FOR T=1 TO 20:X=INT(RND(1)*17):Y=I
NT(RND(1)*13):POSITION X+1,Y+2:? #6;CH
R$(135):NEXT T
180 POSITION 0,16:? #6;"-^^^^^^^^^^_-^^
^^^^_";REM _ IS SHIFT MINUS
185 POSITION 0,17:? #6;"/BONUS:   +/$%
%:  +"
190 POSITION 0,18:? #6;"]EEEEEEEEEE\]EE
EE\";REM NO CONTROL CHARACTERS TYPE
EXACTLY AS SHOWN
195 POSITION 0,19:? #6;"-^^^^^^^^^^^_-
^^^^_";REM SEE 180
200 POSITION 0,20:? #6;"/score:     +/
':  +";POSITION 16,20:? #6;FRU
205 POSITION 0,21:? #6;"]EEEEEEEEEEE\]
EEEE\";REM NO CONTROL CHARACTERS TYPE
EXACTLY AS SHOWN
210 N=1
215 REM BEGINNING OF GAME
220 ST=STICK(0)
225 BONUS=BONUS-1
230 POSITION 7,17:? #6;BONUS:POSITION
7,20:? #6;SC:POSITION 16,17:? #6;LI
235 IF FRU=0 THEN GOTO 595
240 IF ST=15 THEN GOTO 270
245 POKE 77,0
250 IF ST=14 AND M<>1 THEN M=-1:G=0:SH
=38
255 IF ST=13 AND M<>-1 THEN M=+1:G=0:S
H=38
260 IF ST=11 AND G<>1 THEN G=-1:M=0:SH
=36
265 IF ST=7 AND G<>-1 THEN G=+1:M=0:SH
=34
270 IF STRIG(0)=0 THEN STO=-STO:FOR T=
0 TO 50:NEXT T
275 IF STO=-1 THEN GOTO 270
280 IF PEEK(53279)=6 THEN SC=-1:GOTO 3
35
285 REM MOVE MANS POSITION
290 A(1)=A(1)+G
295 B(1)=B(1)+M
300 LOCATE A(1),B(1),Z
305 IF Z<>32 AND Z<>SH+128 AND Z<>165
THEN GOSUB 520
310 IF BONUS=0 THEN GOTO 650
315 GOSUB 565
320 SOUND 1,0,0,0
325 GOTO 220
330 REM
335 IF SC1<SC THEN SC1=SC
510 GOSUB 745:GOTO 90
515 REM WHAT HAVE I HIT?
520 IF Z=33 THEN SC=SC+10:FRU=FRU-1:GO
TO 550
525 IF Z=135 THEN SC=SC+50:FRU=FRU-1:G
OTO 550
530 M=0:G=0:FOR T=2 TO 10:POSITION A(T
),B(T):? #6;" ":NEXT T
535 FOR T=1 TO 10:A(10-T)=T:B(T)=1:NEX
T T
540 LI=LI-1:IF LI=0 THEN GOTO 650
545 GOTO 550
550 SOUND 1,60,4,8
555 POSITION 16,20:? #6;" "
560 POSITION 16,20:? #6;FRU
565 REM DRAW CATERPILLAR
570 POSITION A(NN),B(NN):? #6;" "
575 FOR T=10 TO 2 STEP -1:A(T)=A(T-1):
B(T)=B(T-1):NEXT T
580 POSITION A(1),B(1):? #6;CHR$(SH+12
8):POSITION A(3),B(3):? #6;"@"
585 RETURN
590 REM COMPLETED A ROUND
595 Q=USR(ADR(RESET$)):FOR T=0 TO BONU
S:SOUND 0,T,4,8:SOUND 0,0,0,0:SC=SC+1:
POSITION 7,20:? #6;SC
600 POSITION 7,17:? #6;BONUS-T:NEXT T
605 GRAPHICS 2+16:M=0:G=0:POKE 756,CHP
AGE
610 POKE 16,112:POKE 53774,112
615 FOR T=0 TO 5:? #6;"####################
######":? #6;"############################":NEXT
T
620 POSITION 0,5:? #6;"      WELL DONE
    "
625 FOR T=0 TO 500:SETCOLOR 2,T,6:NEXT
 T:GRAPHICS 1+16:POKE 756,CHPAGE:NN=NN
-1:FRU=20:NO=NO+1
630 IF NN<3 THEN NN=3
635 POKE 16,112:POKE 53774,112
640 SETCOLOR 2,10,5:GOTO 125
645 REM GAME OVER
650 FOR T=0 TO 500:NEXT T
655 GRAPHICS 2+16:M=0:G=0:POKE 756,CHP
AGE:Q=USR(ADR(RESET$))
660 POKE 16,112:POKE 53774,112
665 FOR T=0 TO 5:? #6;"####################
######":? #6;"############################":NEXT
T
670 POSITION 0,5:? #6;"      GAME OVER
    "
675 FOR T=0 TO 300:NEXT T:GRAPHICS 1+1
6:POKE 756,CHPAGE:GOTO 335
680 REM REDEFINE GRAPHICS
685 CHPAGE=PEEK(106)-4:POKE 106,PEEK(1
06)-6
690 TEMP=USR(ADR("hh`Th`Lh`Oh`Thh`P4♦
LL`N`PYTMFOJPP♦"),57344,CHPAGE*256,2)
695 FOR TEMP1=1 TO 51
700 READ TEMP:TEMP=CHPAGE*256+TEMP*8:F
```

```
OR TEMP2=0 TO 7:READ TEMP3:POKE TEMP+T
EMP2,TEMP3:NEXT TEMP2
705 NEXT TEMP1
710 RETURN
715 REM LOAD SOUND
720 DIM V1$(82):RESTORE 1340:FOR L=1 T
O 81:READ B:V1$(L)=CHR$(B):NEXT L
725 GOSUB 1120:POKE 1712,1:V1A=ADR(V1$
):V1AH=INT(V1A/256):V1AL=V1A-256*V1AH:
POKE 1713,V1AL:POKE 1714,V1AH
730 POKE 1737,0
735 GOTO 80
740 REM TITLE SCREEN
745 GRAPHICS 17:DL=PEEK(560)+PEEK(561)
*256
750 POKE 16,112:POKE 53774,112
755 SOU=1:LEV=1
760 POKE DL+3,71:POKE DL+6,7:POKE DL+7
,7:POKE DL+8,6:POKE DL+9,6:POKE DL+10,
2:POKE DL+11,0:POKE DL+12,2
765 POKE DL+13,0:POKE DL+14,2:POKE 15,
6:POKE DL+16,2:POKE DL+17,0:POKE DL+18
,2:POKE DL+24,32:POKE DL+25,124
770 POKE DL+23,65
775 ? #6;"    HUNGRY HORRIS"
780 ? #6;"    =============="
785 ? #6:? #6;"   levels of play"
790 ? #6:? #6;"     1) NOVICE":? #6:?
#6;"     2) INTERMEDIATE":? #6;"     3
) ADVANCED"
795 ? #6:? #6;"    sound choice"
800 ? #6;"     1) SOUND ON":? #6:? #6;
"     2) SOUND OFF"
802 ? #6:? #6;"    high score:";SC1
805 IF PEEK(53279)=6 THEN RETURN
810 IF PEEK(53279)=5 THEN LEV=LEV+1:IF
 LEV=4 THEN LEV=1
815 IF PEEK(53279)=3 THEN SOU=SOU+1:IF
 SOU=3 THEN SOU=1
820 POSITION 5,3+(LEV*2):? #6;" ":POSI
TION 5,10+(SOU*2):? #6;" "
825 FOR T=0 TO 10:NEXT T
830 POSITION 5,3+(LEV*2):? #6;LEV:POSI
TION 5,10+(SOU*2):? #6;SOU
835 POSITION 1,19:? #6;AA$(1,19):AC$=A
A$(2):AC$(LEN(AC$)+1)=AA$:AA$=AC$
840 GOTO 805
845 GOTO 845
850 REM DATA FOR CHARACTERS
855 DATA 1,0,8,4,100,104,0,216,216
860 DATA 2,3,4,126,249,251,249,126,145

865 DATA 3,191,191,0,253,253,0,191,191
870 DATA 4,96,16,62,79,111,79,62,73
875 DATA 5,60,126,255,255,255,255,126,
36
880 DATA 6,195,36,126,153,153,255,126,
60
885 DATA 7,0,24,126,223,191,0,24,24
890 DATA 11,96,96,96,96,96,96,96,96
895 DATA 13,0,0,0,0,0,7,7,6
900 DATA 15,6,6,6,6,6,6,6,6
905 DATA 16,127,65,93,93,93,93,65,127
910 DATA 17,127,119,103,119,119,119,65
,127
915 DATA 18,127,65,93,125,97,95,65,127

920 DATA 19,127,65,125,97,125,125,65,1
27
925 DATA 20,127,95,95,91,91,65,123,127

930 DATA 21,127,65,95,65,125,93,65,127

935 DATA 22,127,65,95,65,93,93,65,127
940 DATA 23,127,65,125,125,123,119,111
,127
945 DATA 24,127,65,93,65,93,93,65,127
950 DATA 25,127,65,93,65,125,125,125,1
27
955 DATA 33,255,231,195,153,153,129,15
3,255
960 DATA 34,255,131,153,131,153,153,13
1,255
965 DATA 35,255,195,153,159,159,153,19
5,255
970 DATA 36,255,135,147,153,153,147,13
5,255
975 DATA 37,255,129,159,131,159,159,12
9,255
980 DATA 38,255,129,159,131,159,159,15
9,255
985 DATA 39,255,193,159,159,145,153,19
3,255
990 DATA 40,255,153,153,129,153,153,15
3,255
995 DATA 41,255,129,231,231,231,231,12
9,255
1000 DATA 42,255,249,249,249,249,153,1
95,255
1005 DATA 43,255,153,147,135,135,147,1
53,255
1010 DATA 44,255,159,159,159,159,159,1
29,255
1015 DATA 45,255,156,136,128,148,156,1
56,255
1020 DATA 46,255,153,137,129,129,145,1
53,255
1025 DATA 47,255,195,153,153,153,153,1
95,255
1030 DATA 48,255,131,153,153,131,159,1
59,255
1035 DATA 49,255,195,153,153,153,147,2
01,255
1040 DATA 50,255,131,153,153,131,147,1
53,255
1045 DATA 51,255,195,159,195,249,249,1
95,255
1050 DATA 52,255,129,231,231,231,231,2
31,255
1055 DATA 53,255,153,153,153,153,153,1
29,255
1060 DATA 54,255,153,153,153,153,195,2
31,255
1065 DATA 55,255,156,156,148,128,136,1
56,255
1070 DATA 56,255,153,153,195,195,153,1
53,255
1075 DATA 57,255,153,153,195,231,231,2
31,255
1080 DATA 58,255,129,243,231,207,159,1
29,255
1085 DATA 59,0,255,255,0,0,0,0,0
1090 DATA 60,96,224,224,0,0,0,0,0
1095 DATA 61,6,7,7,0,0,0,0,0
1100 DATA 62,0,0,0,0,0,0,255,255,0
1105 DATA 63,0,0,0,0,0,0,224,224,96
1110 REM LOADS MACHINE LAUNGAUGE FOR
1115 REM SOUND
1120 RESTORE 1130:FOR T=1536 TO 1737:R
EAD Q:POKE T,Q:NEXT T
1125 REM DATA FOR M/L ROUTINE
1130 DATA 162,0,160,0,32,155
1135 DATA 6,189,177,6,133,203
1140 DATA 189,178,6,133,204,32
1145 DATA 161,6,189,189,6,208
1150 DATA 118,222,185,6,208,113
1155 DATA 188,193,6,177,203,201
1160 DATA 255,208,22,169,1,157
1165 DATA 189,6,169,0,32,155
1170 DATA 6,157,0,210,157,1
1175 DATA 210,32,161,6,76,143
1180 DATA 6,201,254,208,18,169
1185 DATA 0,157,193,6,169,1
1190 DATA 157,185,6,169,0,157
1195 DATA 197,6,76,143,6,72
1200 DATA 189,197,6,208,23,169
1205 DATA 3,157,185,6,157,197
1210 DATA 6,169,0,32,155,6
1215 DATA 157,0,210,32,161,6
```

THE WANDERER

```
1220 DATA 104,76,143,6,169,0
1225 DATA 157,197,6,104,32,155
1230 DATA 6,157,0,210,169,166
1235 DATA 157,1,210,32,161,6
1240 DATA 200,177,203,157,185,6
1245 DATA 200,152,157,193,6,232
1250 DATA 236,176,6,208,3,76
1255 DATA 167,6,76,4,6,72
1260 DATA 138,10,170,104,96,72
1265 DATA 138,74,170,104,96,173
1270 DATA 201,6,141,8,210,76
1275 DATA 98,228,0,0,0,0
1280 DATA 0,0,0,0,0,1
1285 DATA 1,1,1,0,0,0
1290 DATA 0,0,0,0,0,0
1295 DATA 0,0,0,0
1300 REM LOAD ROUTIME FOR ON SOUND
1305 RESTORE 1310:DIM SET$(11):FOR T=1
 TO 11:READ B:SET$(T)=CHR$(B):NEXT T
1310 DATA 104,160,0,162,6,169,7,32,92,
228,96
1315 RESTORE 1320:DIM RESET$(11):FOR T
=1 TO 11:READ B:RESET$(T)=CHR$(B):NEXT
 T
1320 DATA 104,160,98,162,228,169,7,32,
92,228,96
1325 RETURN
1330 REM LOAD ROUTINE FOR OFF SOUND
1335 REM DATA FOR MUSIC
1340 DATA 154,8,164,6,000,8,154,8,164,
6,000,8,154,8,164,6,00,8,154,6,154,6,1
54,6
1345 DATA 154,8,164,6,000,8,154,8,164,
6,000,8,154,8,164,6,00,8,154,6,154,6,1
54,6
1350 DATA 154,8,164,6,000,8,154,8,164,
6,000,8,154,8,164,6,00,8,154,6,154,6,1
54,6
1355 DATA 154,8,164,40,154,10,0,50,254

1380 POSITION 1,5:? #6;A$(1,19):C$=A$(
2):C$(LEN(C$)+1)=A$:A$=C$
1385 FOR TI=1 TO 40:NEXT TI:POKE 77,0:
GOTO 1380
```

ACTION PROGRAMS

```
PROC GETINPUT(BYTE ARRAY P1,S1)
;
; PROMPTS WITH STRING ADDRESSED BY P1
; RETURNS ANSWER IN STRING ADDRESSED
; BY S1
;
 PRINT(P1) INPUTS(S1)
RETURN
```

HUNGRY HORRIS CON'T

```
3,212,160,0,145,212,136,208,251,96
2010 A=USR(1600,RAMTOP-4):A=USR(1600,R
AMTOP-3)
2020 RETURN
2030 REM PAGE FLIP ROUTINE
2040 IF LOOK<3 THEN 2080
2050 ? "No more looks this maze!":? :
? "Press START to continue"
2060 IF PEEK(53279)<>6 THEN 2060
2070 RETURN
2080 GRAPHICS 1+16:POKE 88,0:POKE 89,R
AMTOP-4:DL=PEEK(560)+256*PEEK(561)
2090 POKE DL+4,0:POKE DL+5,RAMTOP-4
2100 POKE 756,RAMTOP-8:SETCOLOR 0,7,8:
SETCOLOR 2,12,8
2110 POSITION POSX+1,POSY:? #6;CHR$(5+
32+128)
2120 IF PEEK(53279)<>6 THEN 2120
2130 POSITION POSX+1,POSY:? #6;CHR$(0+
32):RETURN
2140 REM INSTRUCTIONS
2150 GRAPHICS 0:SETCOLOR 2,12,4:SETCOL
OR 1,12,12:? "";POKE 752,1
2160 ? E$;? :? "Manoeuvre through the
maze using the";? "joystick. If your w
ay is blocked, a"
2170 ? "tone will sound and you must t
ry"
2180 ? "another direction.";? :? "If y
ou need help, the following keys"
2190 ? "are available:"
2200 ? :? "1. N-North )  These keys ch
ange the"
2210 ? "2. E-East )  direction you fa
ce, but"
2220 ? "3. S-South )  not the directio
n the"
2230 ? "4. W-West )  joystick moves y
ou."
2240 ? :? "Press START to continue"
2250 IF PEEK(53279)<>6 THEN 2250
2260 ? "";? E$;?
2270 ? "5. Q-Quit-with option for new
game."
2280 ? :? "6. M-Maze-displays maze fro
m above";? "-this can only be done twi
ce in each"
2290 ? "maze, and adds 5 steps to your
 score!"
2300 ? :? "7. H-Help-gets your positio
n relative to the exit. Can only be us
ed 3 times"
2310 ? "in each maze!"
2320 ? :? "8. I-Instructions (as here)
."
2330 ? :? "The aim of course is to esc
ape in as"
2340 ? "few moves as possible."
2350 ? :? "Good luck!"
2360 ? :? "Press START to continue"
2370 IF PEEK(53279)<>6 THEN 2370
2380 RETURN
```

DVORAK

```
UT #1,28:PUT #1,119:PUT #1,30
150 ? :? "WRITING FILE";PASS=2:LINE=99
0:RESTORE 1000:TRAP 110:GOTO 40
160 ? "BAD DATA: LINE ";LINE:END
1000 DATA A50C8D561DA50D8D571DA50A8D8D
1DA50B8D8E1DADE7028D7A1EADE8028D7B1EAD
08028D781EAD09028D791EA9,361
1010 DATA 55850CA91D850DA95B850AA91D85
0BA97E8DE702A91E8DE802A98F8D0802A91D8D
0902A9FF8D7C1E8D7D1E6020,879
1020 DATA 40154C281DA9308D2B02AD561D85
0CAD571D850DAD8D1D850AAD8E1D850BAD7A1E
8DE702AD7B1E8DE802AD781E,77
1030 DATA 8D0802AD791E8D09024C9F178A48
AD09D2CDFF202D005AEF102D07BAAC99FD00AAD
FF0249FF8DFF02B063C998D0,714
1040 DATA 0AAD7D1E49FF8D7D1EB055C99DD0
0AAD7C1E49FF8D7C1EB047293FC911D0058EDC
02F03C867C8EF202AD7C1ED0,88
1050 DATA 168A2940D0118A857C293FA204CA
DD741EF03CE000D0F6AD7D1ED012A67C8A29C0
857C8A293FAABD341E057C85,207
1060 DATA 7CA57C8DFC02A9038DF102A90085
4DAD7D1EF007AD7C1EF002A9308D2B0268AA68
40A57C4980857CD0D723393E,263
1070 DATA 03042D06072809003D0C120E0F05
11011314162F0218191A1B1C1D1E1F2E211015
242517270A2922382C2B2026,399
1080 DATA 303132333435363738B3A2A3B3C0D
083F06070E0F0000000000000000000000000000
0000000000000000000000000,167
1090 REM * 405 BYTES
```

MIDIMAKE

```
10 clear
30 gosub 1200
50 defint a-z:z=2000:dim midarray(z)
100 fullw 2:clearw 2:flag=0
110 ?:?:?"                          Current
File";Filename$;?:?
120 ?"1.  Record New Sequence"
125 ?"2.  Record Step Mode"
130 ?"3.  Playback Sequence Once"
140 ?"4.  Playback Sequence 'x' Times"
155 ?"5.  Save Current Song"
156 ?"6.  Load a Song"
157 ?"7.  Stop"
160 ?:?input "Enter Number Desired";IN
K
165 if ink)8 goto 100
170 on ink gosub 1000,900,2000,2000,30
00,4000,500,5000
180 goto 100
500 end
900 flag=1
1000 ?"Move Pitch Wheel to Finish"
1005 m=0:f=0:gosub 1200
1010 if m=0 and inp(-3)=0 then goto 10
10
1020 if inp(-3)=0 then f=f+1:goto 1020

1030 if flag=1 then if f)0 then f=50
1040 a=inp(3)+256
1050 if a=224 then gosub 1200:return
1070 if f)0 then midarray(m)=f+1000:m=
m+1
1075 if m=z-1 then ?"Out of Memory":fo
r del=1 to 100:next:return
1078 if m=0 and a(&h80 then midarray(m
)=&h90:m=m+1
1080 midarray(m)=a
1120 f=0:m=m+1
1160 goto 1020
1200 if inp(-3)=0 then return
1210 junk=inp(3):goto 1200
2000 lc=1
2010 if ink=4 then input "Repeat How M
any Times";lc
2020 Input"Tempo (1 to 100)";tempo
2040 for c=1 to lc
2060 b=0
2080 if midarray(b)(1000 then 2100
2090 for loop=0 to int(midarray(b)-100
0)/10*tempo:next:b=b+1
2100 out 3,midarray(b)
2120 if b(m then b=b+1:goto 2080
2140 next
2160 return
3000 rem 'Save array onto disk file
3020 input "      Name of File (8 char
s. or less, no extension) ";filename$
3030 filename$=left$(filename$,8)+".da
t"
3040 open "O",#1,filename$
3050 print#1,m
3060 for loop=0 to m
3070 print#1,midarray(loop)
3080 next
3090 close
3100 return
4000 rem *** Loads .DAT file to midarr
ay ***
4020 input "Name of File (No Extension
s!!!)";filename$
4025 filename$=filename$+".DAT"
4030 open "I",#1,filename$
4040 input#1,m
4050 for loop=0 to m
4060 input#1,midarray(loop)
4070 next
4080 close
4090 return
5000 clearw 2:for loop=0 to m
5010 ?hex$(midarray(loop));" ";
5020 next
5030 stop
5040 goto 100
```

DVORAK

```
10 REM *** DVORAK KEYBOARD ***
11 REM Dave Yearke -- MARCH, 1986
   POKEY Newsletter
20 DATA 0,1,2,3,4,5,6,7,8,9,0,0,0,0,0,
0,0,10,11,12,13,14,15
30 DIM DAT$(91),HEX(22):FOR X=0 TO 22:
READ N:HEX(X)=N:NEXT X:LINE=990:RESTOR
E 1000:TRAP 110:? "CHECKING DATA"
40 LINE=LINE+10:? "LINE:";LINE:READ DA
T$:IF LEN(DAT$)(>90 THEN 160
50 DATLIN=PEEK(183)+PEEK(184)*256:IF D
ATLIN(>LINE THEN ? "LINE ";LINE;" MISS
ING!":END
60 FOR X=1 TO 89 STEP 2:D1=ASC(DAT$(X)
)-48:D2=ASC(DAT$(X+1))-48:BYTE=HEX(D1)
*16+HEX(D2)
70 IF PASS=2 THEN PUT #1,BYTE:NEXT X:R
EAD CHKSUM:GOTO 40
80 TOTAL=TOTAL+BYTE:IF TOTAL)999 THEN
TOTAL=TOTAL-1000
90 NEXT X:READ CHKSUM:IF TOTAL=CHKSUM
THEN 40
100 GOTO 160
110 IF PEEK(195)(>6 THEN 160
120 IF PASS=2 THEN PUT #1,226:PUT #1,2
:PUT #1,227:PUT #1,2:PUT #1,252:PUT #1
,28:CLOSE #1:END
130 ? "INSERT DISK WITH DOS, PRESS RET
URN";:DIM IN$(1):INPUT IN$:OPEN #1,8,0
,"D:AUTORUN.SYS"
140 PUT #1,255:PUT #1,255:PUT #1,252:P
```

ACTION PROGRAMS

```
PROC PRINTBB(BYTE NUM)
;
; PRINTS OUT A BYTE IN BINARY
;
BYTE
 MASK,BIT

 MASK=$80

 FOR BIT=0 TO 7
 DO
  IF MASK & NUM THEN
   PRINT("1")
  ELSE
   PRINT("0")
  FI
  MASK==RSH 1
 OD

RETURN
```

ACTION PROGRAMS

```
PROC DUMP(CARD START,STOP)
DEFINE
 LINE="8"
BYTE ARRAY
 HEX
CARD
 INDEX,SUB
BYTE
 VAL,AUX

 HEX="0123456789ABCDEF"
 POKE(82,1)
 PUTE()
 FOR INDEX=START TO STOP STEP LINE
 DO
  PRINTF("%H:",INDEX)
  FOR SUB=INDEX TO INDEX+LINE-1
  DO
   VAL=PEEK(SUB)
   AUX=HEX(VAL/16+1)
   PUT(AUX)
   AUX=HEX(VAL MOD 16+1)
   PUT(AUX)
   PUT(' )
  OD
  FOR SUB=INDEX TO INDEX+LINE-1
  DO
   VAL=PEEK(SUB)
   IF VAL=155 THEN VAL=32 FI
   PUT(VAL)
  OD
  PUTE()
 OD

RETURN



PROC END_LINE()
CARD
 SCREEN=$58,INDEX,
 START,SIZE,COLUMN=$55
BYTE
 ROW=$54


 START=SCREEN+ROW*40+COLUMN
 SIZE=39-COLUMN
 ZERO(START,SIZE)

RETURN
```

HELP

ACE IS ABOUT BROKE AND WE NEED YOUR HELP. THE CLUB HAS EXPENDED A GREAT DEAL OF MONEY BRINGING YOU THE BEST IN A BBS. WE DIDN'T REALIZE THAT IT WOULD COST AS MUCH AS IT HAS - SO THAT IS WHERE YOU COME IN. WE WOULD LIKE YOU TO SEND IN YOUR RENEWALS AS SOON AS POSSIBLE AND FOR THOSE OF YOU WHO RENEWED WITHIN THE PAST FEW MONTHS PLEASE EXTEND YOUR MEMBERSHIP NOW. DOING THIS WILL HELP US WEATHER THIS FINANCIAL STORM AND WE SHOULD AGAIN BE SOLVENT WITHIN A SHORT PERIOD OF TIME.
THANK YOU ALL FOR YOUR EFFORTS IN THIS MATTER.

HUNGRY HORRIS

Anthony Davies: Gwent Horris is a hungry Atarian cater-pillar but fortunately there is plenty for him to eat. His only problem is he has the tendency to rush at things and knock himself out on the walls in his garden. The object of the game is to get Horris to eat as many fruits as he can. There are cherries worth 10 points each and mushrooms worth 50 points. Eat 20 and you get a bonus before going on to the next round. If you hit a wall you losse one of your three lives. There are three levels of play chosen by the SELECT key. In Novice mode you only have one wall to avoid but in Intermediate mode you have five and there are ten in the Advanced mode. There is sound throughout the game but you can choose to turn this off by using the OPTION key at the beginning of the game. Best of luck in feeding Horris. When you press START for the first time the screen will go blank for about 20 seconds.

The Wanderer

by Stephen Pedler

Maze games have always been popular puzzles, both before and since the advent of personal computers. However, the graphics capability of computers means we can now travel through a maze as though we were actually inside it — the 3D maze game. 'The Wanderer' is just such a maze. Brief instructions are summarized in the program itself, but are amplified here.

On running the program, you are first presented with a reminder of the instructions. Pressing the START button then shows you the maze from a bird's-eye view complete with your starting position and that of the exit. Note the exit and start positions change each time you play a new game, but that the maze itself is constant.

Pressing start again puts you into the maze. You move throuth the maze using the joystick (up=North, right=East, down=South, and left=West). The number of moves you have taken is displayed at the bottom of the screen, as is the direction you are facing. If you wish to look in another direction, simply press the corresponding key (N,S,E,W). Note however that pushing the stick up still moves you North. This can be slightly confusing until you get the hang of it. If you get stuck help is at hand. Pressing the 'H' key gives you your position relative to the exit, while pressing 'M' shows you te maze from above complete with the positions of yourself and the exit. In order to prevent the game from getting too easy, you can only use these facilities a small number of times in each game. Using the 'M' key also adds 5 steps to your score as an additional penalty.

Finally, pressing 'Q' allows you to quit the game with an option to play again (with different start and exit positions). If you don't want to play another game, the program will erase itself from memory. Pressing 'I' allows you to remind yourself of the instructions.

PERSONAL PASCAL

(Reprint, March 1986 Current Notes, OSS, $79.95, reviewed by Ed Seward)

Let me start with the disk and it's contents. Among the files on the disk are the required four program files: PASCAL.PRG, EDIT.PRG, COMPILER.PRG and LINKER.PRG. (More on these files in a little bit.) Also on the disk is a collection of demo programs, a list of errors found in so far and several "Include" files for accessing GEM.

The execution of PASCAL.PRG (the "Manager") places you in the Pascal environment. From this point you can choose the compiler and linker options and save them as the new defaults. There are three things I don't like at this level. The first is that when exiting the Pascal manager after compiling; it takes a few tries with the mouse to get window slide bars to work properly. Another is the editor and compiler can only use filenames with the extension of "PAS". This means one has to change the name of the file from the GEM Desktop. (One can display the whole directory from the Pascal manager, its just when a file with an extension other than "PAS" is used that kicks one back to the manager). The last thing is that on a one drive system all the required files must be on the same disk. This problem could be taken care of in a one meg machine with a ramdisk.

The Pascal Editor. Upon entering the editor one will notice a status line at the top of the screen. On the left end of the line is the name of the file being edited including the drive and path. The right side of the line is for the various indicators like: whether one is in "insert" or "replace" mode; if the auto backup is enabled; auto indent on/off. There is also a counter for the amount of memory available for the source code and the line number of the cursor's position.

The writers of Personal Pascal have set up the editor so as to make as many people happy as possible. For most commands, one has a choice of using "Wordstar" commands or using the cursor control keys. The availabilty of the "Wordstar" commands should make many people happy. Personnaly, I prefer to use the cursor keys. To move one character in any of the four basic directions, just use the appropriate arrow key. To move up or down one screen push a [Shift] key and an arrow key at the same time. The [Shift] left and right arrow keys allow one to go to the beginning or end of a line. When using the [Control] key with the left and right arrow keys, the cursor is moved to the beginning of the next word in the appropriate direction.

Besides the additional keyboard editor commands there are the commands using the function keys. To delete a line and place in the copy buffer just press the [F1] key. Pressing the [Shift] and [F1] just deletes the line. To insert the copy buffer at the cursor's position press [F2]. The "Find" a string command is [F3]. The search and replace string is [F4]. The [F5] key causes the last find or search command to be repeated. The auto indent is toggled on/off with [F6]. The [Shift] and [F6] toggles the "BAK" or auto backup state. Using [F7] allows one to save either the copy buffer or the complete text. One can read a file into the copy buffer using [F8]. The [F9] key saves the text back to the filename from which it was loaded. (If the backup is on then the original file's extension is changed to "BAK" before writing the text to disk.)

After writing the file and exiting the editor, the compiler is loaded and executed. (If there are no compiler errors and the option is set, the compiler will chain to the linker. Thus, with the push of a single key one can have an executable program.)

The Compiler. There are eight options available from the Pascal Manager. One is the choice to compile for GEM or TOS. The "Pause after error" option tells the compiler to pause or not after an error. If one does not pause after errors then all errors are written to a text file. If one selects to pause after error then when an error is found two windows will appear; one with the line of source code where the error was found, an error number and a text description of that error (if ERRORS.TXT is on the disk) and another window asking "Ignore Edit Abort". Ignore continues the compile; abort returns one to the Pascal manager. Edit exits the compiler, loads the editor and the source file, puts the cursor at the position where the error was found and displays the error message in the status line. The "Chain to linker" compiler option was mentioned earlier. The "Temporary directory" option allows one to specify a different directory/drive for the temporary work files. This option will be more useful after installing the TOS ROMs, upgrading to one meg or when using a hard disk.

There are three other options that are mainly for debugging. "Full debug mode" includes code such that the line number and the name of the procedure where an error occurred will be displayed. "Stack checking" and "Range checking" are self explanatory. If one tends to be a little lax in error trapping then the last two options may save some potential system hangs. The last option is to include code to clear all the local variables. I prefer to handle that myself.

I ran into one problem with the compiler. I made an error in an include directive that resulted in about twenty-five errors. Not using the "Pause after error", as near as I can tell, the compiler ran out of room on the disk. (The system was not hung in the true sense as it knew when a disk was inserted into the drive and would run the motor.) There was no error message — just nothing at all. True, I could have made sure there was more than a few k-bytes of space left on the disk. There should have been some kind of message and a way to get out of it without rebooting the system.

While the compiler is running it displays the error count, each include file's name as they are included and a cancel button to abort the compile. The only thing I'll mention about the linker is that one has the option to link for TOS or GEM.

Personal Pascal. So far I haven't found any of the ususal Pascal features missing. Several ones have been added. String and byte were to be expected and are supported. Also included is Long_Integer. The limit for integer types (Maxint) is 32767 and Long_Maxint is 2,147,483,647 for long_integer types. Two functions "Shl" and "Shr" have been added to work with integer types as shift-left and shift-right. The usual string handling routines are included; Concat, Copy, Length, Delete, Insert. Random disk access is also supported with a Seek procedure. There are also a couple routines to access the TOS command line; Cmd_Args returns the number of arguments in the command line, Cmd_GetArg gets a command from the command line. The list of predefined portions of Personal Pascal below are from the manual.

```
==========================================
   Predefined Data Types
   Alfa          Byte          Boolean          Char
   Integer       Long_Integer  Real             String
   Text
   Predefined Constants
   False         Input         Long_Maxint      Maxint
   Nil           Output                         True
   Predefined Procedures
   BasePage      Chain         Cmd_GetArg       Delete
   Dispose       Erase         Get              Halt
   Insert        Mark          Message          New
   Pack          Page          Put              Read
   Readln        Release       ReName           ReSet
   ReWrite       UnPack        Write            Writeln
   Predefined Functions
   Abs           ArcTan        Chr              Clock
   Close         Cmd_Args      Concat           Copy
   Cos           Eof           Eoln             Exp
   Filename      Handle        KeyPress         Length
   Ln            Long_Round    Long_Trunc       MemAvail
   Odd           Option        Ord              Pos
   Pred          PwrOfTen      Round            Shl
   Shr           Sin           SizeOf           Sqr
   Sqrt          Succ                           Trunc
==========================================
```

There are 90 pages of documentation for the non-GEM portion of Pascal.

Personal Pascal & GEM. There are 98 routines for accessing GEM and 134 pages of documentation for those routines. There is routine for doing alert boxes and it is plenty. Most of the other routines can be grouped into four catagories: dialog boxes, windows, the menu bar and event management.

Two dialog boxes are very easy to implement. One is to select an input file and another is to select an output file. Then there are numerous routines used to set up a box including setting the type and color of text, buttons and valid characters for an editable text field. There are step-by-step instructions for setting up a dialog box along with good explanations of the routines.

I haven't used the windows much — yet. I haven't used the rest of the routines at all. There are twenty-two window routines just for text styles and graphics. These include rectangle, oval and arc drawing, cursor move, plot and line drawing. The menu bar routines provide all that is needed for one to do there own drop down menus.

Documentation. With one group of exceptions I would say the documentation included with Personal Pascal is excellent and all one should expect. The group of exceptions are three directives: GEMDOS, BIOS and XBIOS. They are mentioned as existing and taking one integer parameter each. (My understanding is that the number of parameters should vary.) As I write this in early February, OSS has said they will be making the documentation available in a few days.

The rest of the manual I found to be very complete and easy to find the information I needed. This manual is not meant to teach Pascal and as such it does not waste any space on a tutorial.

Features (bugs). I have come across two bugs besides the two I mentioned earlier. First, 'Read' and 'Write' only work on text files. I played with this for a while before using 'Get' and 'Put' as shown in the manual. The other problem is that the manual says 'Insert' can have a "packed array of char" as the source to be inserted into a string. I used other means to do it one character at a time.

I called OSS today to verify these bugs. The guy I talked to said they are getting ready to release a small patch to take care of the problem with the slidebar when exiting Pascal. The 'Insert' problem is probably a documentation error. OSS should be coming out with the next version of Pascal in April. There may be a patch to take care of the 'Read' and 'Write' problem before then, if not, then that release should take care of the problem. I found the system easy to adapt to and friendly to use. There are quite a few error messages to make finding the syntax errors a little easier. I also liked the full debug mode as a compiler option. Even with the bugs I mentioned I think Personal Pascal is a good way to take advantage of the ST's features.

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AUDIO MOD

(reprint: FACCS, March, 1986)

There have been a few people who have complained about the audio output of the 130XE being significantly lower than the 800/XL computers. There is a fix. Locate R8, a 51k ohm resistor. It is the second resistor to the right of the LM358 audio amp chip. This chip is located in front of the video modulator. Tack solder a .47 uf cap across it. That's it. Enjoy.

— Rich Andrews
Chicagoland Atari UG

Doctor AtariWriter

by Gary Furr

While I was working for Atari during those "glory days" I came to be known as Doctor AtariWriter because I was always running around the company helping people cure the problems that they were having with AtariWriter. I guess you could say that I made a lot of "cubicle calls." Well those days are gone now, but my "practice" still flourishes. With the AtariWriter cartridge being the word processor of choice for many Atari computer owners, and with prices coming down to the range that almost anyone can own an Atari computer system and an AtariWriter cartridge, I get a lot of questions from first time users and an occasional hard question on a special word processing problem from an old timer.

I have spent a lot of my time over the last four years helping users of the Atari computers and especially AtariWriter and my Printer Drivers. In the Instructions to my "AtariWriter Printer Drivers" I have summarized the most ask questions and answers to problems that I have solved over the years. These questions and answers often help long time users of AtariWriter as much as they do first time users.

In an effort to help as many people as possible learn to use computers productively, I will write this column on a regular basis, but only as long as there appears to be a continued interest from the readers.

Question (1)

I have recently purchased an Atari computer and I additionally purchased an Atari 1027 Letter Quality printer, a disk drive and an AtariWriter cartridge. I have heard that the Atari is capable of printing International characters but I can't figure out how to do this. My native language is Spanish and I write many letters to friends and relatives in Spanish. Please help me with AtariWriter and the 1027 printer to access the International characters.

Answer (1)

It is a little known fact in the Atari world that there are four International versions of the AtariWriter cartridge. The French, Spanish, Italian and German versions of the AtariWriter cartridge were delivered to Atari about a month before Jack Tramiel bought the company. These versions worked on all Atari computers and with the Atari 1020, 1025, 1027 and 1029 printers as well as with non-Atari printers using my Printer Drivers. The easy answer to your question is to ask you to write to Atari and ask that those versions be released to the public. However, until this happens, I'll give you the hard answer so that you can start writing those cards and letters.

In this article I have constructed a table of locations of the International Character Set in the Atari 1020, 1025, 1027 and 1029 printers. The latest version of the AtariWriter cartridge (RX-8036 Version D) supports these printers directly from the main printer menu. The older AtariWriter cartridge requires my Printer Driver for support of the Atari 1027 printer. First, when you want to use one of the International Characters available on your printer, from inside AtariWriter you must send a decimal function code to the printer which turns ON the International Character Mode and then send a decimal code for the specific International character that you want printed, and then send another code to turn the International Character Mode OFF.

You can send function codes to any printer through the text using AtariWriter and the "CTRL+O" method described in the AtariWriter Users Guide. Here's how you turn ON the International Character Mode, hold down the CTRL key and press the "O" key. You will get an inverse video "O" on the screen. Then type the numbers "27". Now without any spaces, make another CTRL+O and follow this one with the number "23". This set of numbers turns ON the International Character Mode in the 1020, 1025, 1027 or 1029 printer. Now you must send the decimal code for the specific International character that you want, so make another CTRL+O and then type the decimal code for the character that you want (check the function code table for the decimal code). For example, if you wanted to use an "i" with two dots over it, your decimal code would be 9. Now you must use the CTRL+O method again to turn the International Character Mode OFF. The decimal codes for this are 27 and 24.

If you were doing this in a BASIC program, you would still use the same decimal codes as above, the difference is that your codes would go inside a CHR$(xx) statement instead of as in AtariWriter using the CTRL+O method. For example, to turn ON the International Character Mode, print the "i" with two dots over it, and turn OFF International Character Mode, your BASIC line of code would look like this:

PRINT CHR$(27),CHR$(23),CHR$(9),CHR$(27),CHR$(24)

I sure hope this helps you get started writing those overdue letters back home using the International Character Mode. Make that first letter to Atari Corp. asking them to release those International versions of the AtariWriter cartridge.

—

Question (2)

I have just bought a new AtariWriter cartridge (RX-8036 Version D) and when I use the Printer Selection #3, and try to use the CTRL+O method of sending function codes to my non-Atari printer, it does not work correctly. Am I doing something wrong, or is the AtariWriter cartridge defective?

Answer (2)

When the AtariWriter cartridge was modified to produce Version D, Atari specified that the printer types be changed from the old Atari 820 and 822 to the newer Atari 1020 and 1027 printers. This change has caused you not to be able to use the CTRL+O method of sending function codes to the printer as it is described in the AtariWriter Users Guide.

Unfortunately, the new cartridge was updated about the time that the new Atari Corp. was being born and some things at Atari dropped through the crack. The Users Guide should have been updated to reflect the fact that you could not use the CTRL+O method, but instead with the latest version of the AtariWriter cartridge you are required to have one of my AtariWriter Printer Drivers to interface to a non-Atari printer, but the User Guide update didn't make it to publication.

Therefore, with the new version of the AtariWriter cartridge, you must use one of my AtariWriter Printer Drivers in order to interface properly to your non-Atari printer. Currently I support over 110 AtariWriter Printer Drivers covering dot matrix, daisy wheel, thermal, and ink jet printers, and I am adding new Printer Drivers regularly. If you would like a list of the printers that I support, send me a self addressed, stamped envelope to the address below and I will be happy to send you my list of printers. If you know that I support your non-Atari printer and you want to purchase one of my Printer Drivers, in the USA, Canada or Mexico, send $10.00, cash, cashier's check or money order to the address below. Internationally, because of the extremely high cost of postage, I must charge $15.00 per Printer Driver.

The phone number below is an answer machine, and I will not answer calls in "real-time" since it is not my objective in life to replace Atari Customer Service. I will return calls to you only if you are willing to accept the charges.

Question (3)

I have just bought the new AtariWriter Plus and am having trouble building a Driver for my printer. Since you have so many Printer Drivers for the old AtariWriter cartridge, are you planning to support the new AtariWriter Plus with Drivers?

Answer (3)

Absolutely, positively, without a doubt, NO! NO! NO! I designed the original AtariWriter. I designed and have built and supported over 110 Printer Drivers for the AtariWriter cartridge. I designed and managed the development of all four International versions of AtariWriter and I designed the AtariWriter Plus about two years ago, just before Jack Tramiel bought the company. Since that time, Atari has chosen not to involve me with AtariWriter Plus, and since Atari feels that the "build your own Driver" is adequate, I do not plan to use or support the AtariWriter Plus product.

Gary W. Furr
P.O. Box 1330
Mountain View, CA 94042-1330
(415) 490-7057 - answer machine

TURN INTERNATIONAL CHARACTER MODE ON IN DECIMAL = 27 23
TURN INTERNATIONAL CHARACTER MODE OFF IN DECIMAL = 27 24

INTERNATIONAL FUNCTION CODE TABLE

DECIMAL CODE	HEX CODE	ATARI CONSOLE	INTERNATIONAL CHARACTER MODE
0	00	CTRL ,	â
1	01	CTRL A	ù
2	02	CTRL B	ñ
3	03	CTRL C	ê
4	04	CTRL D	ç
5	05	CTRL E	ô
6	06	CTRL F	ò
7	07	CTRL G	ì
8	08	CTRL H	£
9	09	CTRL I	ï
10	0A	CTRL J	ü
11	0B	CTRL K	ä
12	0C	CTRL L	ö
13	0D	CTRL M	ú
14	0E	CTRL N	ó
15	0F	CTRL O	ö

INTERNATIONAL FUNCTION CODE TABLE

DECIMAL CODE	HEX CODE	ATARI CONSOLE	INTERNATIONAL CHARACTER MODE
16	10	CTRL P	Ü
17	11	CTRL Q	â
18	12	CTRL R	û
19	13	CTRL S	î
20	14	CTRL T	é
21	15	CTRL U	è
22	16	CTRL V	ñ
23	17	CTRL W	ê
24	18	CTRL X	à
25	19	CTRL Y	à
26	1A	CTRL Z	À
96	60	CTRL .	Î
123	7B	CTRL ;	Ä
125	7D	ESC CTRL <	←
126	7E	ESC DEL BS	↑
127	7F	ESC TAB	→

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SortFinder Index

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